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Recommendations for Older Women with Early Stage Breast Cancer

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13. ABSTRACT <i>(Maximum 200 words)</i> The purpose of this study was to investigate how surgeons' demographic characteristics, practice setting, educational background, knowledge, and beliefs about breast cancer therapy influence their propensity to recommend breast-conserving treatment (BCT) or modified radical mastectomy (MRM) for older women with early-stage breast cancer. The study aimed to interview 60 surgeons from southeast Texas. Fifty-six surgeons were contacted and 50 surgeons agreed to participate in this study. All interviews were verbatim transcribed as well as data collected from written questionnaires were coded and entered into computer. A preliminary analytical file was constructed with data from the interviews and survey. Surgeons had great variability in experience or perception of BCT and these factors were related to their propensity to recommend treatment. The main controversies remained about equivalence between mastectomy and BCT in the community practice, in terms of cosmetic results and local recurrence rates of a surgery. The variability could reflect the uncertainty or lack of consensus on the care of older women with breast cancer since none of large clinical trials to support the 1990 NIH consensus statement on treatment of early-stage breast cancer included women aged 70 years or older. Extrapolation of trial results from younger to older women may lead to uncertainty or variation in clinical judgement in breast cancer treatment in older women.			
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FOREWORD

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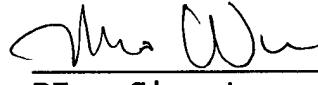
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INTRODUCTION

Background

Evolving paradigm of views about breast cancer treatment: In the academic domain, a number of consensus statements and practice guidelines have proposed that breast conservation surgery (BCS), with axillary node dissection and post-operative radiation therapy (BCT), is preferable to modified radical mastectomy because it provides an equivalent survival rate while preserving the breast. In the early 1990s, researchers consistently reported lower usage of BCS in the U.S., especially in the South (Farrow et al. 1992; Lazovich et al. 1992; Nattinger et al. 1992, 1994, 1996). Also, women who receive breast conserving surgeries are at risk of not receiving adjuvant radiotherapy (Farrow et al. 1992; Lazovich et al. 1992), which results in a high rate of local recurrence. Meanwhile, from the patient's perspective, significant numbers of women opt for mastectomy (Fallowfield et al. 1996). This leads to the question: If BCT is preferable to total mastectomy and axillary node dissection in treating early stage breast cancer, why has the use of BCT been much less than expected?

Role of surgeons in treatment decision making: Traditionally physicians have had a predominant role in their patients' treatment decisions. With increasing belief in consumerism, however, many patients prefer to share decision making with physicians. Regarding breast cancer, in particular, the increased attention in the women's rights movement has led women to expect to participate more actively in treatment decision making. However, recent research has shown that fewer women than expected wish to take a major role in decision-making about their breast cancer treatment (Fallowfield 1997). Kotwall and his associates (1996) studied 251 breast cancer cases during January 1990 to December 1991 and reported that the surgeon was the driving force for the surgical decision-making for early-stage breast cancer, with a high degree of patient compliance. Wu et al. (unpublished, 1996) also confirmed that the surgeons' recommendation dominated the surgical decision making if an older women did not strongly express her opinion about fear of cancer recurrence or loss of a breast.

Older patients are also less likely to participate in treatment decision making than younger patients (Fielding & Hung, 1996). Until recently, elderly women often have received suboptimal treatment, particularly for early-stage breast cancer (Law et al. 1996). These results lead to the conclusion that surgeons' recommendations would be even more important for the older population in treatment decision making.

Controversy over decision-making for breast cancer surgery still persists. Surgeons may attribute this continuing debate in part to the difficulties of applying clinical trial results and recommendations to individual patients. Whereas clinical decisions may be based on the known risks and benefits of alternative therapies, they may be also influenced by the patient's unique needs, the community's medical resources, and the physician's experience and practice orientation. The respective roles that these factors play in choice of breast cancer surgery are not well understood, particularly for older women. We are seeking a better understanding of how surgeons and patients arrive at different choices of treatment for breast cancer. Data from patient interviews have been studied in the past, but with little attention to the influence of surgeons on

treatment decisions. We are proposing to study surgeon's views on treatment of early stage breast cancer, especially with regard to factors influencing choice of breast cancer treatment for older women.

Non-clinical factors influence surgical treatment recommendation: Attitudinal factors:

Most of the literature on breast cancer treatment has focused on patients' perspectives and few studies have researched the physician's outlook. Some studies utilized hypothetical patient scenarios and asked physicians to evaluate them (Deber & Thompson 1987, Kiebert et al. 1991, Liberati et al 1987, 1991, McFall et al. 1994, Singletary et al. 1993). Their results found two factors that may influence a physician's recommendation for hypothetical patients: a) physician's attitudes or beliefs about breast cancer in older women, and b) physician's attitudes toward patient participation in treatment decision making. For example, perceptions about more advanced disease and low tolerance of radiation among older patients appear to be obstacles for physicians when recommending or choosing definitive BCT as a treatment for older patients (Singletary et al 1993). This study also indicated that the limited life expectancy of older women, coupled with comorbidity, may frequently result in less aggressive treatment of breast cancer or non-definitive treatment (BCS without radiotherapy). Another study (Liberati et. al. 1991) reported that physicians who were concerned more about patients' expectations and importance of cosmetic consequences would be more likely to use BCT.

Liberati and associates (1991) explored physician's beliefs towards involving patients in the treatment decision. The researchers developed a scale with 10 statements such as 'even if they receive enough information most patients are too upset to make a decision' or 'most patients want to be involved in treatment decisions'. Studies from the United States and Italy have used this scale to measure physician's attitudes toward patient involvement in decision making (Liberati et al. 1987 & 1991). These studies reported that if a surgeon was more willing to involve his or her patients in the decision-making process, he or she showed preference for conservative surgery.

In the case of breast cancer, the views about breast cancer and its treatment have evolved along with time. In the past, breast cancer was usually diagnosed at a more advanced stage and viewed as beginning locally and spreading centrifugally, almost always along lymphatic pathways. Based on this view, breast cancer was a solely surgical disease: surgeons performed an extensive operation, taking out all tissues or organs around the cancer. Treatment for breast cancer was exclusively done by surgeons. Currently, the paradigm for breast cancer has shifted to a systemic disease, even in early stage cancer. To some extent, radiotherapy, chemotherapy, or hormonal therapy are involved as part of the treatment. The treatment for breast cancer is not left to surgeons alone, but involves other specialists, such as oncologists and radiotherapists. A potential factor which may influence the treatment decision is physician attitudes toward involving other health professionals in treatment. Lebovits et. al. (1989) developed a multifaceted scale to assess attitudes towards cancer. From this scale, they tapped a multidisciplinary team approach to correlate with treatment decision. In other words, willingness to collaborate with other health professionals, such as oncologists, radiotherapists, etc. may influence a treatment decision.

Social-Environmental Influences: Kosecoff et al., (1987) studied the influence of the National Institutes of Health Consensus Development Program on physicians practice, including surgical management of local breast cancer. Results showed that the consensus conferences have failed to stimulate change in physician practice. Lomas and colleagues (1989) focused on assessments of beliefs in a consensus conference and change in actual practice. If physicians believed in or agreed with treatment recommendations from the consensus conference, they were more likely to change their behavior in practice. Poor knowledge of the actual recommendations predicted very little change in practice.

Other factors identified in previous studies were the physician's general beliefs toward clinical trial results (Deber & Thompson 1987, Greer 1977, 1988, Haley et al. 1968). For example, if surgeons do not believe findings from clinical trials, they may not be motivated to seek information about new treatments. The distrust of clinical trial results would be an obstacle to seeking additional information about new treatments.

Roger (1983) stated a relatively small number of opinion leaders in a community often initiate trends and innovations. These key individuals serve as disseminators of information and expectations through a community and further can facilitate communitywide behavior change. Greer (1977, 1988) also defined these key individuals as opinion leaders who first heard of and first adopted a medical innovation and also circulated relevant information among professionals. These individuals acted as leaders or pioneers in the dissemination of a new treatment in a medical setting. In other words, physician's decision making was influenced by the pressure of one's peers. Eisenberg (1979) stated that on surgical wards, "decisions were made by the chief resident and orders were given to all members of the hierarchy". (p. 961). In the proposed study, we want to test within each surgeon's community, if practice styles of key opinion leaders influence other surgeon's treatment decisions.

Clinically Related Factors: Few previous studies have investigated the relationship between a surgeon's knowledge about a procedure and his/her treatment decisions. Breast cancer treatment provides a unique opportunity for studying this phenomenon because the surgical approach of breast conserving treatment remains controversial to some extent. There is no uniform standardized protocol on how to perform BCS: in North America, there has been wide acceptance of the tumorectomy or lumpectomy, while in Italy, following the Milan trials, there has been a preference for a segmental or quadrantectomy approach. Furthermore, controversy remains over the purpose of axillary dissection (for cancer staging or as part of the treatment); how much breast tissue must be removed to provide an 'adequate' margin to achieve local control; and whether the entire breast needs to be treated by radiation therapy in all patients after adequate partial mastectomy. Lack of precisely-stated treatment protocols may cause variation in breast conserving surgical operations. Might these differences in breast conserving surgery reinforce a surgeon's preference for using the long-term and well-established mastectomy approach? There is no study available to answer this question.

Hypothesis/Purpose

In summary, these studies generally confined their views to physician's concern for their patient, either clinically or psychologically, with little attention to the social-environmental factors that may influence decisions as well. We need to expand the scope of such studies to include what physicians or surgeons think about non-clinical factors while making treatment decisions.

We hypothesize that surgeon's knowledge, beliefs, and attitudes will influence surgical treatment recommendation in older women with early stage breast cancer. The primary aim in this study is to identify surgeon's characteristics that may affect the recommendation of breast conserving treatment (BCT) over mastectomy in older women (aged 65 or older) newly diagnosed with stages I or II breast cancer. The secondary aim is to identify surgeon's characteristics that may influence the choice of definitive BCT versus non-definitive BCT. Definitive BCT is defined as a breast sparing procedure (lumpectomy, excision of lesion of breast, or excisional biopsy) with radiation within 5 months after diagnosis (Samet et al. 1986).

Technical Objectives

1. To assess the impact of surgeons' beliefs about breast cancer in older women and about involving older patients in the decisions on treatment recommendation for early-stage breast cancer.
2. To assess the effect of surgeon's perceived social environmental influences on treatment recommendation in older women.
3. To assess the effect of surgeon's knowledge of a breast cancer procedure on treatment recommendation for early stage breast cancer.
4. To assess surgeon's attitudes towards care for elderly patients, and involving other health professionals in decision making on treatment recommendation for early stage breast cancer.

METHODS

Study Cohort

The target population consists of women and their surgeons who participated in an earlier study of Barriers to Breast Cancer Treatment in Older Women (BBCT) in southeast Texas (James Goodwin, M.D. and Elizabeth T. Anderson, Dr.P.H. Co-principal investigators). The setting for this study is a sample of 15 hospitals in south-east Texas. These hospitals represent a range of organizational settings that provide care for racially and ethnically diverse patient populations. The physician target population includes all surgeons responsible for breast cancer surgical treatment of the target patients.

A total of 60 surgeons were recruited. Because of the previous recruitment of patients and medical record extraction from the BBCT study, we have contacted these surgeons on many occasions. We re-contacted 56 surgeons to obtain data on their knowledge, beliefs, and attitudes and 4 surgeons lost contact because they moved out of state. Additionally, we asked surgeons to evaluate a hypothetical patient (See the instruments in Appendix).

From a total of these 56 surgeons, the PI conducted face-to-face interviews with 50 of them. Data on non-respondents, including age, gender, year of certification, and specialty certification were obtained from the 1996 Official AMBS of Board Certified Medical Specialists or the Texas Medical Association to assess response bias. In order to maintain confidentiality, no data file contained surgeons' names or any other identifying characteristics.

Data Collection

Surgeons were contacted from one to 20 times for scheduling an appointment as a regular clinical visit. After obtaining oral informed consents, surgeons were interviewed in person mostly in their offices or occasionally at places or time convenient to them. The interviews took 30 minutes to 2 hours. All the interviews were audio-taped and the taped interviews were transcribed verbatim by a professional transcription agency.

Development of Instruments

The outcome and explanatory variables from surgeons were developed by pretesting candidate instruments in three stages. The instruments included a semi-structured questionnaire to evaluate a 75-year-old hypothetical patient and a paper-pencil questionnaire including surgeons' attitude towards care in older patients. In the first stage, an expert panel consisting of a breast surgeon, geriatrician, epidemiologist and psychologist assessed the content validity of the questionnaire designed for the current study. In the second stage, the investigator contacted ten surgical residents at the University of Texas Medical Branch (UTMB) to pre-test the questionnaire. In the third stage, ten more physicians including eight general surgeons, one plastic surgeon and one medical oncologist in Fort Worth, Texas, were contacted. In addition, the investigator also consulted with two breast oncological surgeons practicing at the Breast Clinic at M.D. Anderson Cancer Center, Houston. During these pretests, the physicians commented on the questionnaires and suggested changes, which were included in the revised questionnaires. The physicians from the pretests were not included in the database for this study.

Beliefs: There were three sets of belief scales which were tested here: beliefs about breast cancer, beliefs about involving older patients in decision-making, and perceived social influences related to breast cancer treatment for older women.

Beliefs about treating breast cancer in older women: First, belief questions concerning breast cancer in older women were obtained from Singletary and associates' study (1993). The original study did not collect data on these questions, but used ad-hoc data from literature reviews. Due to inconsistent findings specific to each question from the original study, the investigator anticipated that there would be no "correct" answer to each question. The response

to the question was re-classified as "favorable attitude towards BCS" versus "unfavorable". If surgeons strongly agreed with Questions A.a, b, c, & d, the responses were coded as "unfavorable attitude" (See Form II, Appendix). These statements included:

"Patients aged 65 years or older usually have more locally advanced breast disease at initial presentation than younger patients" (QA.a),

"Older patients have more indolent breast cancer than younger patients do." (QA.b)

"Older breast cancer patients have a limited life expectancy from comorbid conditions other than breast cancer." (QA.c),

"Older breast cancer patients do not tolerate standard treatment." (QA.d)

In addition, a question about the side effects of radiation also included, "Radiotherapy should not be employed if it has serious side effects on an older breast cancer patient." This question was first used to assess the willingness of physicians to involve others in treatment decision (Lebovits et al. 1984). After reviewing face validity and content validity, it seemed to be appropriate to use this statement to assess surgeons' beliefs about how to treat an older woman with breast cancer.

Three statements regarding surgeons' cosmetic concerns were listed (See Form II, Appendix) The statements concerning breast cancer in older patients were from a 1987 Canadian study (Deber & Thompson 1987). The statements included: "In general, patients make a good adjustment to the loss of breast," and "The loss of a breast is insignificant compared with the possibility of dying of breast cancer." In the preliminary study, the fear of recurrent breast cancer was another important factor to consider in having mastectomy when compared to loss of a breast. Therefore, the third statement about loss of a breast versus recurrent breast cancer was added to the instrument. An agreement with each statement was considered to have a positive belief in treating patients with MRM. In general, the higher levels of agreement indicated the higher likelihood in recommending MRM to patients.

After reversing the codings of the 'indolent disease' statement, an overall index was created from the eight statements to assess the general beliefs about breast cancer in older women. Higher scores indicated a higher likelihood in recommending MRM as opposed to BCS.

Beliefs about involving patients in treatment decisions: A series of statements was used to measure physicians' attitudes towards their patients' participation in treatment decisions (Biener 1984; Liberati et al. 1987, 1991). No reliability or validity tests were reported in the previous studies. However, Liberati et al. (1987) found that a score constructed by these items was highly predictive of recommendations of radical surgery, conservative surgery only for younger patients, and conservative surgery for all ages through evaluation of hypothetical breast-cancer patients. By using a modified instrument, Liberati et al. (1991) confirmed that each individual item from this instrument was significantly related to treatment recommendations. Physicians revealed significant differences in willingness to involve patients in decision-making. Physicians who were more willing to involve their patients in treatment decisions were more likely

to prefer for conservative surgery. The instrument, also called the Attitudes Toward Patient Participation Scale (APPS), seemed to be a consistent predictor of treatment recommendation.

This instrument was used by Liberati and his associates in a 1991 report and consisted of five positively worded statements and five negatively worded statements (Refer to Appendix and specific part of questionnaire Ba – Bj). For example, among the negative items, the respondents were asked to agree with whether “asking patients to participate in treatment decisions produces unnecessary stress” or “patients may lose confidence in their physician if they believe that he/she has no firm opinion about the best treatment”. Higher levels of disagreement with these statements were associated with an increased likelihood of recommending BCS. Among the positive terms, the respondents were asked if they agreed with the statements “patients who participate in treatment decisions are less anxious and depressed” or “most patients want to be involved in treatment decisions”. Higher levels of agreement with these statements were associated with an increased likelihood of recommending BCS.

These items were implemented in the current study. The question order of these statements was re-arranged by mixing negatively worded statements and positively worded statements. This helped to avoid response patterns. The surgeons’ willingness to involve patients in decision-making was expected to be associated with their propensity to recommend a treatment.

Perceived social influences concerning breast cancer treatment in elderly women: There are three types of social influences: 1) local consensus/local opinion leaders on breast cancer surgical treatment, 2) the 1991 NIH breast cancer treatment consensus statement, and 3) clinical trial results.

Local consensus and opinion leaders: The local consensus is referred to as “the operational norms of local community” (Greer 1988). Local consensus was identified by asking surgeons “in a case like this, what do you think other surgeons in your area would do?” The responses to this question were coded as to what surgeons perceived their colleagues did: “the same” as they did or otherwise “different”. More MRM surgeons were expected to report that their colleagues would do the same when treating this hypothetical patient. The assumption was that the norm in treating early-stage breast cancer in Texas was still MRM because data showed a higher use in this area.

On the issue of local opinion leader, surgeons were asked a series of questions adopted from Greer (1995), such as “if you wish to discuss questions with other surgeons at your hospital, on whom would you most likely call?”, “Who are the surgeons at your hospital with whom you most find yourself informally discussing cases or therapies in the course of an ordinary week?”, “Is there a surgeon in your area, by that, I mean Galveston/Houston/Beaumont, you admire?”, and “Would you please give the characteristics of that person?” After local opinion leaders were identified, the investigator probed to identify the leader’s specialty and treatment preference for early-stage breast cancer. Most local opinion leaders were expected to be participants in this study. Therefore, in such cases, the probe was omitted because the treatment propensity would be known through the interviews of the opinion-leader surgeons.

Influence of the NIH Consensus Statement was obtained by asking surgeons "Are you familiar with the 1991 NIH consensus conference statement on early-stage breast cancer treatment?" The Statement said that "breast conservation treatment is an appropriate method of primary therapy for the majority of women with Stage I and Stage II breast cancer and is preferable because it provides survival equivalent to total mastectomy and axillary dissection while preserving the breast". Responses of "yes", indicating surgeons were familiar with the Statement, were associated with the likelihood of using more BCS. "Can you recall if the Consensus statement changed your practice in breast cancer treatment?" was also asked. If surgeons responded "yes", this would be associated with higher levels of likelihood of BCS recommendation. Further questions were asked "how did it affect your practice?" or "why didn't it have an impact on your practice?"

An open-ended question assessed the impact of clinical trial results on breast cancer surgical treatment. The question was "How do you think the results of new clinical trials influence daily practice?". The answers to this were "definitely influenced" as 1, "influenced" as 2, "somewhat influenced" as 3, "did not much influence" as 4, and "not at all" as 5. The higher score reflected lower levels of influence that might be associated with a higher likelihood of recommending MRM.

Knowledge/experience: Surgeons' knowledge about breast cancer treatment focused on local recurrence from breast cancer treatment and life expectancy for a 75-year-old woman.

Knowledge: The estimates of local recurrence from both breast conservation treatment and mastectomy for early-stage breast cancer were obtained. On average, estimates of local recurrence rates from BCT were expected to be higher than that from mastectomy. BCT had higher risks of local recurrence than mastectomy (NIH 1991). A wide range of local recurrence rates (6 – 19%) was reported in previous studies (Isaacs 1992). Variations in surgeons' estimates of these rates were expected to relate to their propensity to recommend a treatment.

Local recurrence rates from BCT coded as 1 through 5 were '0–≤5%', '≥5–≤10%', '≥10 – ≤15%', '≥15–≤20%', and '≥20%'. Surgeons with an MRM propensity were expected to report higher estimates of local recurrence rates from BCT than the surgeons with a non-MRM propensity. Such high estimates may be associated with low usage of BCS among MRM surgeons. The local recurrence rates from mastectomy were expected to be similar as reported by MRM surgeons and by non-MRM surgeons. Mastectomy was the standard treatment since 1894 (Baum 1992; Fisher & Gebhardt 1978; Halsted 1894; Lewison 1972; Robinson 1986). Its low local recurrence rates were also known in clinical practices. The coding for the local recurrence rates from mastectomy was '0–≤2%', '≥2 –≤5%', '≥5 –≤10%', and '≥10%'.

The other knowledge measure was life expectancy for a 75-year-old woman. Goodwin (1989) found that physicians who underestimated life expectancy for a 75-year-old woman were more likely to undertreat their older patients.

Experience: The experience in treating older patients was assessed by a series of questions. The three questions were "Is there ever a situation where you do BCS without lymph

node dissection?", "Is there ever a situation where you do BCS without radiotherapy?", and "Is there ever a situation where you do not refer your breast cancer patients to oncologists?" The responses were coded as yes =1 and no=0. The variations of such experiences in treatment were expected to have an impact on the clinical practice.

Surgeons' experiences in BCT cosmesis were measured by asking the question: "In general, what do you think of the long-term cosmetic results from breast-conserving surgery plus radiation treatment?" The responses were "excellent" coded as 1, "good to excellent" as 2, "good" as 3, "fair to good" as 4, "fair" as 5, "poor to fair" as 6 and "poor" as 7.

Attitudes: Two scales to measure attitudes were included in the current study: attitudes toward care of older patients and attitudes toward involving other physicians in treatment.

Attitude toward care for elderly patients: The measures were derived from several open-ended questions: "What kind of things do you have to think about when you decide about treatment for 75-year-old women that you do not usually think about when you treat the women in their 50s?" and "In your practice, what are the most common reasons for performing a mastectomy on older patients with stage I or IIa breast cancer?" Several measures were generated by these questions, including surgeons' concerns about medical or general health problems, their patients' views about cosmetic results, and other social-psychological problems related to treating older breast cancer patients.

Willingness to involve other physicians in treatment decisions: The related variables were reported from a study of medical students (Lebovits et al. 1984). A factor, named 'team treatment', had 4 items which loaded highly in a factor analysis and had a Cronbach's alpha of 0.55 (Lebovits et al. 1984). The validity of this factor was also in question. Furthermore, the authors (1984) suggested that the reliability and validity of this instrument should be re-evaluated with samples other than medical students who were study subjects in previous studies. Therefore, our current study adapted these questions for a different physician population. The willingness of surgeons' collaboration with other physicians in decision-making was tested. The respondents in the current study were asked to evaluate the statements, such concerns as whether "management of cancer patients by a multidisciplinary medical team, i.e., surgeons, radiotherapists, oncologists, etc. makes it difficult to provide continuity of care" and "adequate care for the cancer patient requires a team of medical specialists from different disciplines.

Analytical Plan

Categorical Variables: A Fisher's exact test was used with a two-sided test for statistical significance and a p-value less than 0.1. This test gives exact p-values and is always appropriate for analysis of data that can be arranged in 2 x 2 tables and sample size was small (Koch & Edwards 1988; Stoke et al. 1995).

Ordinal Variables. To measure the relationship between recommendation propensity and ordinal variables, the investigator chose to use the row mean score statistics (Q_{SMH}) using the

Cochran-Mantel-Haenszel option in PROC FREQ, which was effective for detecting location shifts across ordinal response levels. This test is appropriate when one variable is ordinal and other is not (Agresti 1996; Koch & Edwards 1988; Stock et al. 1995

Continuous Variables. Continuous variables were assessed by a two-sided Wilcoxon Rank Sum 2-sample test using p-values less than 0.1 for statistical significance (Lehmann 1975). The variables were ranked by the scores. The sum of the ranks in each of the samples at the levels of outcome variable was obtained. The test determines whether these ranks are so disparate that they are not likely to have come from samples which were all drawn from the same population (Lehmann 1975). In addition, several indices created in the study, the investigator applied a Cronbach's reliability test.

Multivariate Analyses: If demographic variables were statistically significant at 0.10 from Fisher's exact tests, the Cochran-Mantel-Haenszel tests, or Wilcoxon Rank Sum 2-sample tests, these significant variables were kept as control variables for a further multivariate analysis. Several indices including surgeon's experience of BCS, attitudes towards treating older women with breast cancer, and attitudes towards involving patients in decision making were created by summation of corresponding items in the survey. The means of these indices calculated at the levels of outcome variable were then used to impute missing values. After imputation, a final multinomial logit model included some demographic information, and three indices of experience of BCS, attitudes towards treating older women with breast cancer, and attitudes towards involving patients in decision making.

This multivariate multinomial logit model was used to estimate the influence of surgeon's factors on their propensity to recommend treatment (MRM, none, or BCS). This outcome variable was a 3-category nominal level of measurement and was predicted by using maximum-likelihood estimates. With the *P* values significant at 0.01, 0.05 or 0.1 levels, odds ratios (OR) were calculated by exponentiating coefficients generated by the logit model

Findings

The outcome variable for the surgeons' data is the treatment recommendation obtained from assessing a hypothetical patient with early-stage breast cancer, described as follows: "A 75-year-old women presents with a firm 2.0 cm diameter mass in the upper outer quadrant of her right breast. Mammography and ultrasound are suspicious for cancer. Axillary lymph nodes are clinically negative and there are no other signs of metastases." Surgeons were then asked. "What if she (the hypothetical patient) asks you what you would recommend, what would you say?" Hence, the responses of this question were defined as "surgeon's propensity to recommend a treatment" to this hypothetical patient with early-stage breast cancer.

All 6 female surgeons recommended BCS (n=1), or neither BCT nor MRM (n=5) to this hypothetical patient. Among 6 female board-certified surgeons, none had propensity to recommend MRM, 5 for no recommendation, and 1 for BCS. Most were white (n=4) and practiced in a solo private setting (n=4). Their average age was 48 years with 53% was their

average percentage practiced in breast diseases. These results showed that female surgeons had distinct different characteristics from their male counterparts in this study. With a small number of female surgeons in the current study, further study is suggested to explore the gender differences in treating older women with early-stage breast cancer.

Among the rest of 44 male surgeons, 22 (55%) were classified as "mastectomy surgeons" when they recommended mastectomy to the hypothetical patients. Fourteen "no preference" surgeons (32%) left it to their patients to make the choices between breast conservation treatment (BCT) and mastectomy. The remaining eight "breast conservation surgeons" or "BCS surgeons" (18%) recommended either lumpectomy, quadrantectomy, tylectomy, wide local excision, wedge resection, segmental mastectomy, or partial mastectomy (Porterfield & Love 1995) with or without radiation within 5 months after diagnosis (Samet et al. 1986).

Table 1 describes characteristics of male surgeons. Whether these surgeons practice in a solo or group setting and their proportions of practice in breast cancer were statistically associated with their propensity to recommend treatment ($p=0.06$ & $p=0.07$) (Table 2). No other variables were statistically associated with propensity to recommend treatment.

Among male surgeons, those who did not agree with the 1990 consensus statement about treatment for early stage breast cancer were prone to recommend MRM (Table 2). Seventeen of 22 (77%) MRM surgeons, compared to 2 of 12 (14%) "no recommendation" and none of 8 BCS surgeons, did not agree with the Statement. Surgeons who estimated the higher local recurrence rates from BCT had a propensity to recommend MRM compared to their counterparts ($P < 0.01$). The degree of satisfactory cosmetic results from BCS was the most common issue that surgeons mentioned in the interviews. Surgeons who perceived worse cosmetic results were significantly more likely to recommend MRM or to have no recommendation ($P < 0.01$). About 40 percent (17/43) of surgeons reported ever doing a BCS without radiation therapy. Surgeons who had experience in treating patients BCS without radiation therapy were more likely to have propensity to recommend MRM than their counterparts ($P < 0.01$).

Summing all the scores created a summary measure of the experience with BCT, ranged from 2 to 12. A Wilcoxon Rank Sum test showed that surgeons who have least optimal experience with BCT (mean=8.9) are more likely to recommend MRM than their counterparts (mean= 5.18) for "no recommendation" and mean=3.67 for BCS) ($P < 0.01$).

Table 3 lists four statements which were hypothesized to measure surgeon's attitudes associated with breast cancer care in older women. Side effects from radiotherapy were more concerned among MRM surgeons than other surgeons ($P=0.04$). Furthermore, their views about life expectancy in older breast cancer patients and the loss of a breast versus recurrence issue significantly distinguished the different propensity groups ($P=0.02$ & $P=0.05$).

Summing all the scores created a summary measure of these attitudes, ranged from 8 to 20. A Wilcoxon Rank Sum test showed that surgeons who have stronger personal opinions about how to treat older women with breast cancer (mean=16.17) are more likely to recommend MRM

than their counterparts (mean=13.19 for "no recommendation" and mean=13.5 for BCS) ($P < 0.03$).

Table 4 shows a series of statements designed to measure physicians' attitudes toward involving patients in treatment decisions (Liberati et al 1987, 1991). In the current study, however, there were no systematic patterns identified among the study subjects. A summative score was created with a range of 16 to 40. A Wilcoxon Rank Sum test did not show any significant difference among MRM (mean = 33.72), "no recommendation" (mean = 34.17), and BCS surgeons (mean=31.75) ($P < 0.47$).

The results from a multivariate logistic analysis show in Table 5. Controlling style of practice and percentage of practice in breast diseases, surgeons' experience and their attitudes towards breast cancer care in older women significantly predicted their propensity to recommend treatment. Surgeons with less optimal experience with BCT were more like to have propensity to recommend MRM than to recommend BCS (OR=12.9) or have no recommendation (OR=3.49). Surgeons with less optimal experience were less like to recommend BCS than to have no recommendation (OR=0.27). Surgeons with stronger attitudes towards breast cancer care in older women were more like to recommend MRM than to have no recommendation (OR=1.46). The comparison between MRM and BCS surgeons was not statistically significant but the magnitude of OR were fairly large (OR=1.42). There was not different reported between "no recommendation" and BCS surgeons.

CONCLUSION

Based on the Statement of Work, the major activities were conducted 1) completing the field work (pretesting and interviewing); 2) transcribing, coding and editing the data; 3) preparing the study's analytical file; 4) performing statistical analyses; and 5) preparing manuscript for publication. A summary of the work progress with respect to each of these activities is given below.

Field Work

Fifty six surgeons were contacted and 50 were interviewed in person mostly in their offices or occasionally at places or time convenient to them after obtaining oral informed consents.

Transcribing, coding and editing the data

All the interviews were audio-taped and the taped interviews were transcribed verbatim by a professional transcription agency and edited by PI. The written questionnaires were entered by a staff from Office of Biostatistics, UTMB. The data was double entered by PI. Errors were identified and subsequently corrected in a succession of revised files.

Preparing Analytic File

The raw data file was converted to an analytic file. This process involved recoding the data into variables that can be used for analyses with the Statistical Analysis System (SAS).

Performing Statistical Analysis

The analyses were performed on the 56 interviews. These aims of these analyses were to: 1) describe the study samples in terms of selected demographic characteristics; and 2) make initial assessment of the relationships between selected variables hypothesized to influence surgeons' propensity to recommend treatment.

Strengths and Limitations

There are several strengths and limitations of this study. The strengths include 1) the large number of face-to-face interviews with primarily community surgeons, 2) combination of qualitative and quantitative methods; 3) first comprehensive investigation on surgeons' attitude and beliefs about early stage breast cancer. Despite the above strengths, the sample size of surgeons is limited to a specific geographic area as Southeast Texas. Due to the small samples, a limited numbers of female surgeons were included in the study. Their background information and propensity to recommend treatment substantially differed from those of male surgeons. Further studies will be suggested to investigate on both male and female surgeons' experience and attitudes in other areas in the country to illustrate geographic variations of their propensity to recommend treatment.

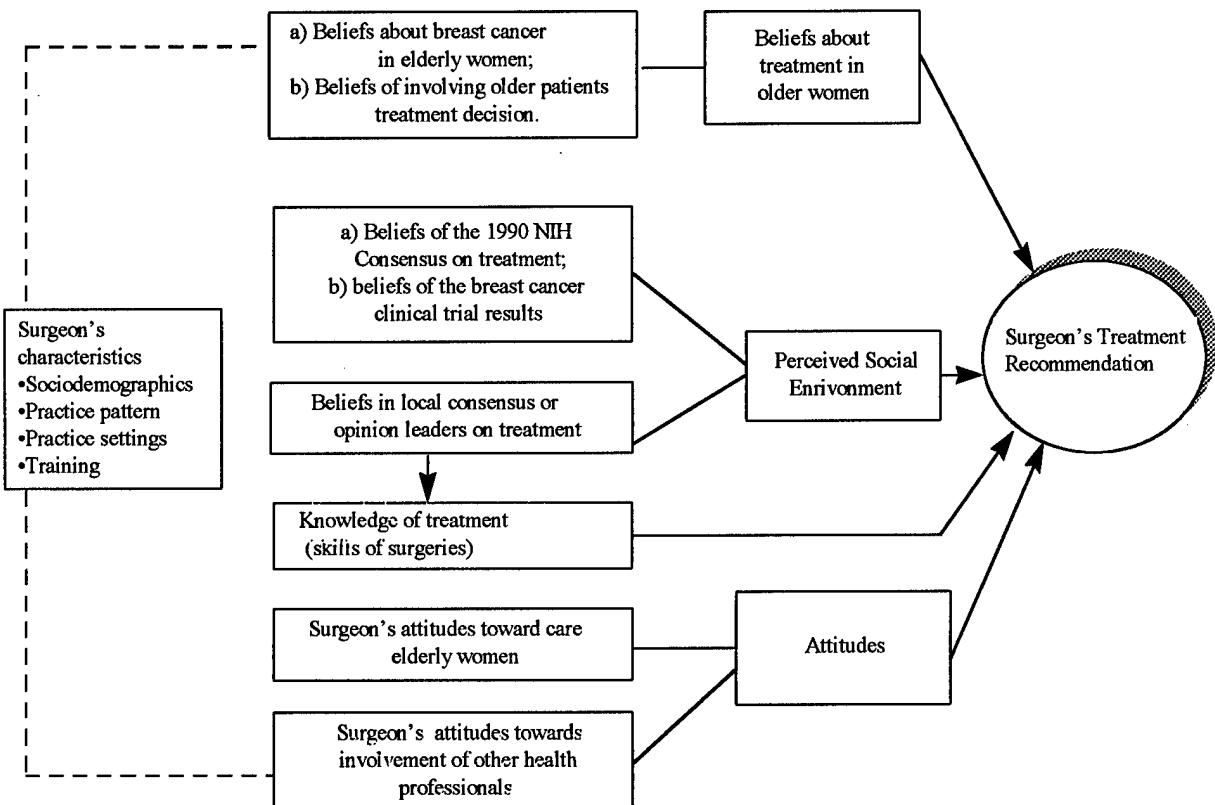
Summary

The primary aim of this study was to assess if surgeons' characteristics influenced their propensity to recommend treatment for older women with early stage breast cancer. We found some of surgeons' demographic and practice background information was related to their propensity to recommend MRM. Being in a solo practice setting and having smaller volumes of practice in breast diseases were more likely to result in a propensity to recommend mastectomy.

This study provides a comprehensive view of surgeons' propensity to recommend a surgical treatment for older women with early stage breast cancer. Surgeons showed a great variability of their experience or perception, attitudes of BCT to determine their propensity to recommend treatment. The main controversies remained about equivalence between mastectomy and BCT in the community practice, in terms of cosmetic results and local recurrence rates of a surgery. The variability could reflect the uncertainty or lack of consensus on the care of older women with breast cancer since none of large clinical trials to support the 1990 NIH consensus statement on treatment of early-stage breast cancer included women aged 70 years or older. Extrapolation of trial results from younger to older women may lead to uncertainty or variation in clinical judgement in breast cancer treatment in older women.

ILLUSTRATIONS/TABLES

Figure 1. A Model of Treatment Recommendation^a For Older Women with Early Stage Breast Cancer



^a: Surgical treatments include mastectomy, appropriate BCS, and inappropriate BCS.

Table 1. Description of Male Surgeons' Background Characteristics by Their Propensity to Recommend Treatment

Characteristics	Surgeons' Propensity to Recommend			P	
	BCS	None	MRM		
Demographic Characteristics					
Age, y	n Mean (SD)	8 59 (13)	14 51(12)	20 59 (12)	0.15*
Race/ethnicity, n	Non-white ^{††} White	0 8	2 12	7 15	0.17†
Educational Background					
Board Certified in General Surgery, n	Yes No	7 1	13 1	19 3	1.00†
Length of Graduation, y	n Mean (SD)	8 32 (15)	14 26 (12)	19 34 (12)	0.21*
Practice Setting					
% Practice in Breast Diseases	n Mean (SD)	6 36 (23)	13 40 (25)	17 22 (24)	0.06*
Practice Style, n	Solo Group	2 6	8 6	16 6	0.07†
Teaching Hospital, n [†]	Yes No	5 3	5 9	9 13	0.52†

*: P values from Wilcoxon Rank Sum tests.

†: P values from Fisher's Exact Tests.

††: Non-white respondents including African Americans, Asians, and Hispanics.

Table 2. Surgeons' Knowledge and Experience with the 1990 NIH Consensus Statement about Breast Cancer Treatment

Variables	Total*	Descriptions	Surgeon's Propensity to Recommend		P
			MRM	None	
Do you agree with the 1990 NIH Consensus Conference Statement? n	44	1 = No 0 = Yes	17 5	2 12	0 8
Local recurrence rate from BCS and radiation treatment, median (Q1-Q3)	35	1 = 0 -≤5% 2 = > 5 -≤10 3 = >10 -≤15 4 = >15 -≤20 5 = >20	3 (3 - 5)	1.5(1 - 2.5)	2 (1 - 2)
Cosmetic results from BCT, median (Q1 - Q3)	39	1 = Excellent 2 = Good to Excellent 3 = Good 4 = Fair to Good 5 = Fair 6 = Poor to Fair 7 = Poor	3 (3 - 5)	3 (3 - 3)	2 (1 - 3)
Breast-conserving surgery without radiation treatment, n	43	1 = Yes 0 = No	12 9	4 10	1 7

*: The total numbers varied due to missing values.

†: P values from Fisher's Exact Tests.

††: P values from Wilcoxon Rank Sum tests.

Table 3. Surgeons' Beliefs about Treating Breast Cancer in Older Women by Propensity to Recommend Treatment

Statements	Surgeons' Propensity to Recommend				P^t
	Total	MRM	None	BCS	
Radiotherapy should not be employed if it has serious side effects on an older breast cancer patient.	38	4 (4 – 5)	3 (2 – 3.5)	3.5 (2.5 – 4)	0.04
The loss of a breast is insignificant compared with the possibility of recurrent breast cancer for older patients.	39	4 (4 – 5)	3 (2 – 4)	3.5 (2 – 4)	0.02
The loss of a breast is insignificant compared with the possibility of dying of breast cancer for older patients.	39	4 (3 – 5)	4 (3 – 4)	4 (2.5 – 4)	0.40
Older breast cancer patients have a limited life expectancy from comorbid conditions other than breast cancer.	41	4 (4 – 5)	3 (2 – 4)	4 (2.5 – 4.5)	0.05

^{*}: Interquartile range

^t: P-values from Cochran-Mental-Haenszel tests

Table 4. Medians (Q1-Q3)* of Ratings of Surgeons' Attitudes toward Involving Patients in Treatment Decisions by Propensity to Recommend Treatment

	MRM	None	BCS	P†
Negatively Worded Statements				
Older patients cannot possibly make good decisions because they do not understand all the information.	1 (1 - 2)	1 (1 - 2)	1.5 (1 - 2)	0.96
Encouraging older patients to participate in treatment decisions may do more harm than good.	1 (1 - 2)	1 (1 - 2)	2 (1 - 3)	0.33
Even if they receive enough information most older patients are too upset to make a decision.	1 (1 - 2)	2 (1 - 2)	1.5 (1 - 2.5)	0.97
Asking older patients to participate in treatment decisions produces unnecessary stress.	1 (1 - 3)	1.5 (1 - 2)	2 (2 - 3)	0.24
Older patients may lose confidence in their physicians if they believe that he/she has no firm opinion about the best treatment. ††	4 (2 - 4)	4 (2 - 4)	4 (4 - 4.5)	0.10
Positively Worded Statements				
Older patients who participate in treatment decisions make a better adjustment to the disease.	5 (4 - 5)	5 (4 - 5)	5 (4 - 5)	0.22
If given comprehensible medical information, older patients can make good decisions about treatment.	4 (4 - 5)	4.5 (4 - 5)	4 (3.5 - 5)	0.64
Most older patients want to be involved in treatment decisions.	5 (4 - 5)	5 (4 - 5)	4.5 (4 - 5)	0.90
Older patients who participate in treatment decisions are less anxious and less depressed.	4 (3 - 5)	4 (3 - 5)	3.5 (2.5 - 4.5)	0.79
Older patients should have a greater influence on treatment decisions than their doctor. ††	2.5 (2 - 4)	3 (2 - 4)	3 (2 - 4)	0.68

*: Interquartile range †: P-values from Cochran-Mental-Haenszel tests. ††: These two statements were not included in the summative index in Table 5.

Table 5. Adjusted Odds Ratios from Multinomial Logit Model

Characteristics	Surgeons' Propensity to Recommend		
	MRM vs. BCS	MRM vs. None	BCS vs. None
Less Optimal Experience in Breast Cancer Treatment	12.9***	3.49*	0.27*
Stronger Personal Beliefs towards Treating Older Women with Early Stage Breast Cancer	1.42	1.46*	1.03
Positive Attitudes toward Involving Patients in Decision Making	1.27	1.14	0.90
Controlling for practice and % of practice in breast diseases			
***: <0.01			
**: <0.05			
*: <0.1			

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APPENDIX

**Center on Aging
UTMB**

**SURVEY ON SURGEON'S PERSPECTIVES
ON CHOICE OF SURGICAL TREATMENT
FOR EARLY STAGE BREAST CANCER IN
OLDER WOMEN**

QUESTIONNAIRE

(Form I)

301 University Blvd., 2-64 Former Shriners Burn Institute
Galveston, Texas 77555-0860

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ORAL INFORMED CONSENT

Dr. _____, I am Helen Wu, a doctoral student in the Department of Preventive Medicine and Community Health at the University of Texas Medical Branch in Galveston and am conducting my dissertation research on factors influencing choice of breast cancer treatment in older women. I would appreciate your participation in this study as it would contribute to an enhanced understanding of the factors involved in differential treatment perspectives among surgeons.

If you agree to participate in this study, I will interview you at the time and location of your choice. During the interview I will ask you questions about your perspective on the treatment of early breast cancer. It would be helpful if I could tape record our conversation and take notes as we talk. I am requesting your permission to do this. Following the interview, the audiotape will be transcribed verbatim and analyzed along with interview data from other surgeons. The information you share will be held as confidential. The information will be reported in a way that will not identify you or the hospital with which you are affiliated in any way. The tape of our conversation will be erased after the study is completed.

It is not anticipated that there will be any appreciable physical, psychological, legal, social, or economic risks to you as a result of your participation in the study. The interview will take approximately 30 minutes of your time.

If you want to withdraw from the study at any time, you may do so without penalty. The information collected from you would be destroyed if you so desire.

Once the study is completed, I would be happy to share the findings with you. In the meantime, if you have any questions, please feel free to contact me or my advisors.

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Tracking Information

Date: _____

Time Interview Begin _____

ID _____

I am going to present a hypothetical patient and ask you questions about how you would handle the various questions that arise in treating someone with breast cancer. Here is the hypothetical patient:

A 75-year-old women presents with a firm 2.0 cm diameter mass in the upper outer quadrant of her right breast. Mammography and ultrasound are suspicious for cancer. Axillary lymph nodes are clinically negative and there are no other signs of metastases.

HYPOTHETICAL PATIENT

1. What would you do next?
 - a. Discuss choices with patient - go to #4
 - b. Fine needle aspiration biopsy - go to #2
 - c. Core needle biopsy - go to #2 (sterotactic or sonogram-guided)
 - d. Excisional biopsy - go to #3
 - e. Depends on other factors - go to #5
2. Lets suppose the needle biopsy came back positive for malignant cells. What would you do next?

3. Lets suppose the biopsy comes back positive for adeno carcinoma, 2cm diameter, with biopsy margin free of cancer. What would you do next? (Circle all that apply)

4. Discuss choices.

What choices would you usually discuss? (can discuss more than one)

- a. Needle biopsy - go to #6
- b. Excisional biopsy - go to #7, #8
- c. Breast conserving surgery - go to #7, #8
- d. Modified radical mastectomy - go to #7, #8
- e. Reconstruction - go to #7, #8

5. What factors does it depend on?

6. If surgeon picks 1a, then 5.a or 5b. as one choice, state "let's suppose the patient chooses a needle biopsy and (go to question 2).

7. If surgeon picks 5e & 5f as choices, then ask. **"How do you describe the previously mentioned options (or terms that surgeon uses) to the patient?** (From this question we want to know what breast conserving surgery means to surgeon; is it a lumpectomy or quadrantectomy? Does it always/ever require radiation?)

Breast conservation treatment: _____

How much normal breast tissue do you take out around the cancer? _____

Modified Radical Mastectomy: _____

Reconstruction: _____

8. (For any response, ask:) In a case like this, do you have a preference in how you think it would be best to proceed?

- No
- Yes - what is that preference _____

9. (For any response, ask:) What if she asks you what you would recommend, what would you say?: (circle all that apply). To any answer, ask "would you recommend anything else?" until surgeon says no. (Here we are discussing choices for the next step for someone with a lump. If surgeon goes on to discuss specific treatments, make sure that he/she would do it at this step; e.g., "so before the diagnosis was confirmed you would begin the discussion about potential treatments.")

10. What are the choices a patient might reasonably make?

List _____ then go to #7 and #8. (Note: this question is in follow-up to questions about choice of diagnostic evaluation and therapy; so we need to use it 2 or 3 times and will have to repeat it.)

11. Would you do any further treatment after that, or is your treatment now finished?

12. What do you think your colleagues around here do in a case like this?

13. Among your colleagues, what is the average rate of breast conservation treatment use for older stage I or II breast cancer patients? _____ %

14. Is the rest of _____ % from mastectomy use? A. Yes B. No

EXPERIENCE WITH BREAST SURGERY

Now I am very interested in your experience with surgical treatment for Stage I and Stage II breast cancer. The stage I & IIa breast cancer is local with negative axillary nodes and stage IIb is local with positive axillary nodes. We are particularly interested in your experience with older women - those at least of 65 years of age -- that you have seen in your practice in the last five years. Please help me by answering the following questions.

15. In your practice, what percent of your surgical practice is breast cancer? _____
16. About how many new cases of breast cancer have you treated in the last five years? _____
17. What proportion of your breast cancer patients are aged 65 years or older? _____ %
18. What percent of these older patients had stage I or II breast cancer? _____ %
19. Off top of your head, what proportion had medical oncology referrals? _____ %
20. What percent of these older stage I or II patients have you performed breast conserving surgery on? _____ %
21. What percent of them with breast conserving surgery had radiation therapy? _____ %
22. What percent of them received modified radical mastectomy with reconstruction? _____ %
23. What percent of them received modified radical mastectomy without reconstruction? _____ %
24. In general, what do you think of the **long-term cosmetic result** of breast conservation plus radiation therapy treatment? Would you say, excellent, good, fair, or poor?
1. Excellent 2. Good 3. Fair 4. Poor
25. Have you had any patient with an unsatisfactory cosmetic result? a. No b. Yes, what percent _____ %
 - What percent of **unsatisfactory cosmesis** is due to radiation therapy? _____ %
 - What percent of **unsatisfactory cosmesis** is due to surgery? _____ %
26. What do you think the average local recurrence rate for stage I and II breast cancer is from breast conservation treatment? _____ %
27. What do you think the average local recurrence rate for stage I and II breast cancer is from mastectomy? _____ %
28. Overall, which procedure is safer? 1. BCT 2. MRM 3. SAME

29. Is there ever a situation where you do breast conservation surgery without radiation therapy?

1. Yes 2. No

Would you please give me reasons for doing so? _____

30. Is there ever a situation where you do breast conservation surgery without axillary node dissection?

1. Yes 2. No

Would you please give me reasons for doing so? _____

31. Is there ever a situation where you do breast conserving surgery without medical oncology referral?

1. Yes 2. No

Would you please give me reasons for doing so? _____

CARE FOR OLDER WOMEN

Now I am interested in a few questions regarding treating women aged 65 years or old. Would you please help me to answer them.

32. What kind of things do you have to think about when you decide about treatment for 75 year-old women that you do not usually think about when you treat the women in their 50s?

33. In your practice, what are the most common reasons for performing a mastectomy on older Stage I and II breast cancer patients?

NIH CONSENSUS STATEMENT & PRACTICE GUIDELINES

There are a lot of publications on how to treat breast cancer as consensus statements or practice guidelines. We don't know about the impact of these publications on clinical practice. We understand that in clinical practice, consensus statements or practice guidelines may not take sufficient account for each individual patient's uniqueness. We try to explore what the factors influence the change of practice. For example, in 1991, the NIH had a consensus conference statement on breast cancer treatment.

(The 1991 NIH Consensus statement stated that 'breast conservation treatment is an appropriate method of primary therapy for the majority of women with Stage I and Stage II breast cancer and is preferable because it provides survival equivalent to total mastectomy and axillary dissection while preserving the breast').

34. Are you familiar with it? (the 1991 NIH consensus conference on primary breast cancer treatment)
1 Yes 2 No

35. Can you recall if this Consensus statement changed your practice in breast cancer treatment?
Yes ---- How did it affect your practice?

No ---- Why didn't it have an impact? _____

Do you agree with this Consensus statement? 1. Yes 2. No. 3. DK

36. How do you think the results of new clinical trials influence your daily practice? Please give me an example. (please walk me through). If having no influence, probe by asking 'why does not have any influence?'

OPINION LEADERS

We are interested in whom surgeons talk to regarding general surgical issues in treating older women.
Please help us by answering the following questions.

37. If you wish to discuss questions with other surgeons at your hospital, on whom would you most likely call?

Name: _____ Specialty _____

Name: _____ Specialty _____

38. Who are the surgeons at your hospital with whom you most often find yourself informally discussing cases or therapy in the course of an ordinary week?

Name: _____ Specialty _____

Name: _____ Specialty _____

39. Is there anyone (surgeon) in your area, by that, I mean Galveston/Houston/Beaumont, you admire?
1. No 2. Yes → go to Q27

40. If you could have a surgeon you admire, would you please give the characteristics of that person?

Thank you for the interview. Now I have a very short questionnaire which may take you about 5 minutes to finish it. The instrument is adopted from previous studies. Some questions may sound less practical or may be a little awkward. However, for research purposes, I could not change the wordings of these original questions. Please understand it and help me to fill up the questionnaire. Thank you so much for your time and cooperation.

Interview Time End: _____

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**SURVEY ON SURGEON'S PERSPECTIVES
ON CHOICE OF SURGICAL TREATMENT
FOR EARLY STAGE BREAST CANCER IN
OLDER WOMEN**

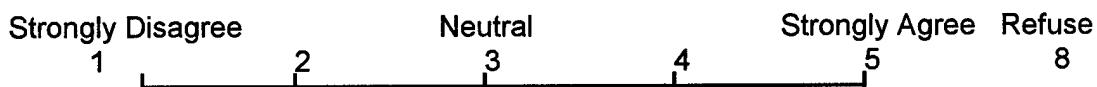
QUESTIONNAIRE

(Form II)

301 University Blvd., 2-64 Former Shriners Burn Institute
Galveston, Texas 77555-0860

A. ATTITUDES/ BELIEFS ABOUT BREAST CANCER IN ELDERLY PATIENTS/TEAM TREATMENT

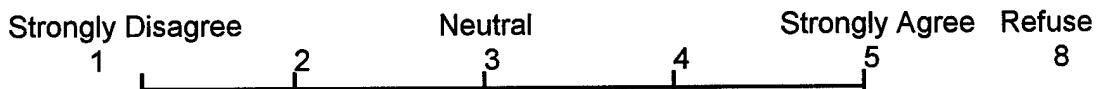
Some surgeons have argued that there are special attributes of older women with breast cancer that affect the management of these patients. Please read the following statements about older women with breast cancer with which you may agree or disagree. After each one, circle whether you strongly agree, agree, are neutral, disagree, or strongly disagree with the statement.



Items	SD	N	SA	RF		
a. Patients aged 65 years or older usually have more locally advanced breast disease at initial presentation than younger patients.	1	2	3	4	5	8
b. Older patients have more indolent breast cancer than younger patients.	1	2	3	4	5	8
c. Older breast cancer patients have a limited life expectancy from comorbid conditions other than breast cancer.	1	2	3	4	5	8
d. Older breast cancer patients do not tolerate standard treatment.	1	2	3	4	5	8
e. Management of older breast cancer patients by a multidisciplinary medical team, i.e., surgeons, radiotherapists, oncologists, etc. makes it difficult to provide continuity of care.	1	2	3	4	5	8
f. Aggressive treatment of breast cancer frequently subjects older patients to illness, pain, and expense without much actual benefit to them.	1	2	3	4	5	8
g. In treating older patients with breast cancer, referrals should be made to an individual physician rather than a team of cancer specialists.	1	2	3	4	5	8

(Continued.)

Please read the following statements about older women with breast cancer with which you may agree or disagree. After each one, circle whether you strongly agree, agree, are neutral, disagree, or strongly disagree with the statement.



Items	SD	N	SA	RF
h. Radiotherapy should not be employed if it has serious side effects on an older breast cancer patient.	1	2	3	4
i. Adequate care for older breast cancer patients requires a team of medical specialists from different disciplines.	1	2	3	4
j. In general, older patients make a good adjustment to the loss of breast.	1	2	3	4
k. The loss of breast is insignificant compared with the possibility of recurrent breast cancer for older patients.	1	2	3	4
l. The loss of breast is insignificant compared with the possibility of dying of breast cancer for older patients.	1	2	3	4

B. BELIEFS ABOUT INVOLVING PATIENTS IN TREATMENT DECISIONS

Now we would like your views on how patients participate in treatment decisions. Please read the following statements with which you may agree or disagree. Think about each statement you read and then circle whether you strongly agree, with the statement, agree, are neutral, disagree, or strongly disagree with the statement.

Items	SD		N		SA		Refuse
	1	2	3	4	5	8	
a. Older patients may lose confidence in their physicians if they believe that he/she has no firm opinion about the best treatment.	1	2	3	4	5	8	
b. Older Patients who participate in treatment decisions make a better adjustment to the disease.	1	2	3	4	5	8	
c. Encouraging older patients to participate in treatment decisions may do more harm than good.	1	2	3	4	5	8	
d. If given comprehensible medical information, older patients can make good decisions about treatment.	1	2	3	4	5	8	
e. Older patients cannot possibly make good decisions because they do not understand all the information.	1	2	3	4	5	8	
f. Older patients should have a greater influence on treatment decisions than their doctor.	1	2	3	4	5	8	
g. Asking older patients to participate in treatment decisions produces unnecessary stress.	1	2	3	4	5	8	
h. Older patients who participate in treatment decisions are less anxious and less depressed.	1	2	3	4	5	8	
i. Even if they receive enough information most older patients are too upset to make a decision.	1	2	3	4	5	8	
j. Most older patients want to be involved in treatment decisions.	1	2	3	4	5	8	

C. KNOWLEDGE OF CARE FOR ELDERLY PATIENTS

Now the following statements about the knowledge and care management of elderly patients with breast cancer. Please fill up these questions.

1. Please estimate the average life expectancy of all 75-year-old white women alive in the U.S. today? _____ Years
2. Please estimate the average life expectancy of all 75-year-old black women alive in the U.S. today? _____ Years
3. In your opinion, which of the following patients may be inappropriate for Tamoxifen therapy? (Please circle all cases you may think usually inappropriate for Tamoxifen).
 - A. A fifty-four year-old women had regional breast cancer with positive estrogen receptor status;
 - B. A seventy-year-old women had local breast cancer with positive estrogen receptor status;
 - C. An eighty-year-old women had regional breast cancer with negative estrogen receptor status.

D. DEMOGRAPHIC INFORMATION

We obtained the following demographic information of yours from the Official ABMS Directory of Board Certified Medical Specialists 1996 V4 and/or the 1996 physician directory. **Please make corrections if the information about you is not accurate and fill in the blank spaces if applicable.**

1. Date of birth _____ / _____ /19_____
2. Year of medical school graduation _____ 19_____
3. Board certification _____ General Surgeon
4. Secondary certification _____
5. Did you do specialty training in surgical oncology beyond your general surgical residency? (Please circle one).
1 Yes 2 No

6. Type of practice Full Time Private Solo Practice

7. What hospitals were you affiliated with?

a. _____

b. _____

c. _____

8. Gender _____

9. Racial/Ethnic Status _____

Thank you for your time. Please mail this back in the attached envelope to:

Breast Cancer Project
Center on Aging
301 University Blvd.
Galveston, TX 77555-0860